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EXAMINER

BAUGH, APRIL L

ART UNIT PAPER NUMBER

2143

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7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/459,815

Applicant(s)

SKENE ET AL.

Examiner

April L Baugh

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,5. 6) ☐ Other: _____

DETAILED ACTION

Continued Prosecution Application

1. Receipt is acknowledged of the "conditional" request for a Continued Prosecution Application (CPA) filed on 6 June 2001 under 37 CFR 1.53(d) based on prior Application No. 09/459,815. Any "conditional" request for a CPA submitted as a separate paper is treated as an unconditional request for a CPA. Accordingly, the request for a CPA application is acceptable and a CPA has been established. An action on the CPA follows.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Fig.1 reference 122 and 124, Fig.3c reference 158, Fig.3d reference 160, Fig.3e reference 133, Fig.12 reference 364,366,368, and 370, and Fig.14 reference 376. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: a brief summary of the invention is missing.

Appropriate correction is required.

Art Unit: 2143

3. The disclosure is objected to because of the following informalities: on pg. 10, line 3 '150B' should be '150A'.

Appropriate correction is required.

Claim Objections

4. Claim 13 objected to because of the following informalities: pg. 27, line 4 of claim 13 'ENDS' should be 'EDNS'. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claim 1-7, 16-22, 30-33, and 37-39 rejected under 35 U.S.C. 102(a) as being unpatentable by US Patent No. 5,774,660 to Brendel et al.

Regarding claim 1, Brendel et al. teaches a method for balancing the load on a plurality of servers that provide access to resources associated with a domain name, comprising: (a) receiving a request for access to resources associated with the domain name; (b) determining the load for each of a plurality of servers that provide access to resources associated with the domain name and selecting one of the plurality of servers to provide the access, the selection of the server being based on a determination for optimally balancing the load on the plurality of servers; and (c) resolving an Internet protocol (ip) address of the selected server so that the

Art Unit: 2143

accessing of resources associated with the domain name at the resolved ip address of the selected server will cause the load to be optimally balanced on the plurality of servers on a network (column 6, lines 20-26 and column 7, lines 19-23 of Brendel et al.).

Referring to claim 2, Brendel et al. teaches the method of Claim 1, further comprises querying a local Domain Name System (DNS) to provide the ip address associated with the domain name (column 2, lines 29-32 of Brendel et al.).

Regarding claim 3, Brendel et al. teaches the method of Claim 2, wherein when the ip address is not present at the local DNS, querying a primary DNS to resolve the ip address associated with the domain name (column 2, lines 27-28 of Brendel et al.).

Referring to claim 4, Brendel et al. teaches the method of Claim 3, wherein when the primary DNS determines the domain name is delegated to a EDNS, further comprising referring the local DNS to the EDNS to resolve the ip address for the selected server, the EDNS employs at least one of a plurality of load balancing determinations to select one of the plurality of servers and resolve the ip address for the selected server (column 2, lines 20-28 of Brendel et al.).

Regarding claim 5, Brendel et al. teaches the method of Claim 4, wherein the EDNS includes the primary DNS (column 2, lines 20-23 of Brendel et al.).

Referring to claim 6, Brendel et al. teaches the method of Claim 4, wherein the EDNS includes a secondary DNS (column 2, lines 27-28 of Brendel et al.).

Regarding claim 7, Brendel et al. teaches the method of Claim 4, wherein the EDNS is a primary EDNS, the primary EDNS collecting metric information employed by the selected load balancing determination to select the server to provide access to the resources associated with the domain name (column 6, lines 53-58 of Brendel et al.).

Referring to claim 16, Brendel et al. teaches the method of Claim 4, further comprising a server array controller for managing access to at least one of the plurality of servers, the server array controller being in communication with the EDNS (column 2, lines 18-28 of Brendel et al.).

Regarding claim 17, Brendel et al. teaches the method of Claim 16, wherein the server array controller is a BIGIP server array controller (column 10, lines 9-13 of Brendel et al.).

Referring to claim 18, Brendel et al. teaches the method of Claim 1, wherein the selected server is a stand-alone server (column 20, lines 65-67 of Brendel et al.).

Regarding claim 19, Brendel et al. teaches the method of Claim 4, further comprising an agent program that collects the metric information and communicates the collected metric information to the EDNS when the EDNS is not resolving the ip address for the resources associated with the domain name request (column 2, lines 27-28 and column 6, lines 56-57 and column 23, line 51 of Brendel et al.).

Regarding claim 20, Brendel et al. teaches the method of Claim 1, wherein the network comprises a wide area network, Internet and intranet (column 8, lines 18-19 and column 16, lines 36-37 of Brendel et al.).

Referring to claim 21, Brendel et al. teaches the method of Claim 4, further comprising a wide ip that maps the domain name to at least one server, the wide ip being employed when the primary DNS is separate from the EDNS (column 2, lines 36-43 of Brendel et al.).

Regarding claim 22, Brendel et al. teaches the method of Claim 21, wherein the wide ip maps the domain name to one of the plurality of load balancing determinations (column 3, lines 2-6 of Brendel et al.).

Referring to claim 30, Brendel et al. teaches the method of Claim 22, wherein the statistics for the wide ip include weighting values for the servers managed by a particular server array controller (column 1, line 9 of Brendel et al.), weighting values for the servers managed by another Host machine (column 1, lines 37-39 of Brendel et al.), the number of successful domain name resolutions, the number of unsuccessful name resolutions (column 2, lines 27-28 of Brendel et al.), the load balancing modes used for the pool of servers managed by each server array controller, the load balancing modes used for the pool of servers managed by each Host machine (column 3, lines 5-6 of Brendel et al.), the number of servers managed by each server array controller that are used to load balance a specified wide ip, and the number of servers managed by each host machine that are used to load balance the specified wide ip (column 3, lines 31-32 of Brendel et al.).

Regarding claim 31, Brendel et al. teaches the method of Claim 4, wherein the EDNS employs an iQuery protocol to communicate the metric information from the agent program to the EDNS (column 2, lines 27-28 and column 10, lines 21-24 and column 23, line 51 of Brendel et al.).

Referring to claim 32, Brendel et al. teaches the method of Claim 1, wherein the EDNS is a 3DNS server (column 2, lines 27-28 of Brendel et al.).

Regarding claim 33, Brendel et al. teaches the method of Claim 1, wherein at least a portion of the plurality of servers are virtual servers (column 7, lines 15-16 of Brendel et al.).

Referring claim 37, Brendel et al. teaches a system for balancing the load on a plurality of virtual servers that provide access to resources associated with a domain name (column 6, lines 56-57 and column 7, lines 15-16 of Brendel et al), comprising: (a) a memory for storing logical

Art Unit: 2143

instructions; and (b) a processor for executing the logical instructions stored in the memory, the execution of the logical instructions causing functions to be performed (column 7, lines 51-52 and column 12, line 16 of Brendel et al.), including: (i) receiving a request for access to resources associated with the domain name; (ii) determining the load for each of a plurality of virtual servers that provide access to resources associated with the domain name and selecting one of the plurality of virtual servers to provide the access, the selection of the virtual server being based on a determination for optimally balancing the load on the plurality of virtual servers (column 6, lines 56-57 of Brendel et al.); and (iii) resolving an Internet protocol (ip) address of the selected virtual server so that the accessing of resources associated with the domain name at the resolved ip address of the selected virtual server by the client will optimally balance the load on all of the virtual servers on a network (column 2, lines 29-32 of Brendel et al.).

Regarding claim 38, Brendel et al. teaches the method for balancing the load on a plurality of virtual servers that provide access to resources associated with a domain name (column 6, lines 56-57 and column 7, lines 15-16 of Brendel et al), comprising: (a) receiving a request from a client for access to resources associated with the domain name; (b) querying a local Domain Name System (DNS) to provide the Internet protocol (ip) address associated with the domain name (column 2, lines 29-32 of Brendel et al.); (c) when the ip address is not present at the local DNS, querying a primary DNS to resolve the ip address associated with the domain name; (d) when the primary DNS determines the domain name is delegated to a EDNS system, referring the local DNS to the EDNS system to resolve the ip address associated with the domain name (column 2, lines 27-28 of Brendel et al.); and (e) employing the EDNS system to balance the load on a plurality of virtual servers that provide access to resources associated with the

Art Unit: 2143

domain name by selecting one of the plurality of virtual servers that optimally balances the load (column 6, lines 56-57 of Brendel et al.), the EDNS system resolving the ip address of the selected virtual server for the domain name and providing the ip address to the client, so that the client will access resources associated with the domain name at the resolved ip address of the selected virtual server(column 2, lines 29-32 of Brendel et al.).

Referring to claim 39, Brendel et al. teaches a computer readable medium having computer executable instructions for performing the method recited in Claims 1, 4, 19 or 23 (column 23, line 51 of Brendel et al.).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Joffe et al. and further in view of Guenther et al.

Regarding claim 8, Brendel et al. teaches the method of Claim 4, wherein selecting one of the plurality of servers that will optimally balance the load and round robin (column 3, lines 5-6 of Brendel et al.).

Brendel et al. does not teach static load balancing determinations being selectable and including random, static ratio, global availability and topology. Joffe et al. teaches further

Art Unit: 2143

comprises choosing the server based on one of a plurality of static load balancing determinations for each server (column 2, lines 63-65 of Joffe et al.), the plurality of static load balancing determinations being selectable and including global availability and topology (column 3, lines 9-10 of Joffe et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. by choosing the server based on one of a plurality of static load balancing determinations for each server because this allows the system to balance the load throughout the network.

Brendel et al. in view of Joffe et al. does not teach the plurality of static load balancing determinations being selectable and including random. Guenthner et al. teaches the plurality of static load balancing determinations being selectable and including random (column 2, lines 24-25 of Guenthner et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Joffe et al. by plurality of static load balancing determinations being selectable and including random because this is a technique for balancing the load in a network.

9. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Hu and further in view of Shah et al. and Joffe et al.

Regarding claim 9, Brendel et al. teaches the method of Claim 4 wherein selecting one of the plurality of servers that will optimally balance the load.

Brendel et al. does not teach choosing the server based on one of a plurality of dynamic load balancing determinations for each server. Hu teaches further comprises choosing the server

Art Unit: 2143

based on one of a plurality of dynamic load balancing determinations for each server (column 2, lines 50-52 of Hu), the dynamic load balancing determinations being selectable and including completion rate (column 9, lines 20-22 of Hu). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. by choosing the server based on one of a plurality of dynamic load balancing determinations for each server because this is a way of balancing the load in a network based on the current load information.

Brendel et al. in view of Hu does not teach least connections, packet rate, hops, or round trip time. Shah et al. teaches hops (column 2, line 28 of Shah et al.), round trip times (column 1, lines 9-10 of Shah et al.), quality of service and dynamic ratio. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Hu by having least connections, packet rate, hops, or round trip time be used to load balance because this are techniques for dynamically load balancing a network.

Brendel et al. in view of Hu and further in view of Shah et al. does not teach least connections and packet rate. Joffe et al. teaches teaches least connections (column 3, line 67 of Joffe et al.), packet rate (column 4, line 3 of Joffe et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Hu and further in view of Shah et al. by least connections and packet rate being used to balance a network because this are techniques for dynamically load balancing a network.

Art Unit: 2143

10. Claim 10-12 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Guenthner et al.

Regarding claim 10, Brendel et al. teaches the method of Claim 4, further comprising selecting one of the plurality of load balancing determinations.

Brendel et al. does not teach of time stamps. Guenthner et al. teaches selecting one of the plurality of load balancing determinations as a primary load balancing determination, the primary load balancing determination being used to select the server when a time stamp is not expired, the time stamp being associated with metric information used by the primary load balancing determination (column 1, lines 50-52 and column 2, lines 44-45 of Guenthner et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al by primary load balancing determination being used to select the server when a time stamp is not expired because this allows the system to choose a primary way of balancing the network.

Referring to claim 11, Brendel et al. teaches the method of Claim 10, further comprising selecting one of the plurality of load balancing determinations.

Brendel et al. does not teach of time stamps. Guenthner et al. teaches selecting one of the plurality of load balancing determinations as an alternate load balancing determination, the alternate load balancing determination being employed to select the server when the time stamp associated with the metric information used by the primary load balancing determination is expired, another time stamp being associated with metric information employed by the alternate load balancing determination (column 1, lines 50-52 and 58-62 and column 2, lines 44-45 of

Art Unit: 2143

Guenthner et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. by alternate load balancing determination being employed to select the server when the time stamp associated with the metric information used by the primary load balancing determination is expired because if the primary method is not successful then the system is able to use an alternate method to balance the network.

Regarding claim 12, Brendel et al. teaches the method of Claim 11, further comprising selecting one of the plurality of load balancing determinations.

Brendel et al. does not teach of time stamps. Guenthner et al. teaches selecting one of the plurality of load balancing determinations as a fallback load balancing determination, the fallback load balancing determination being employed to select the server when the time stamp associated with metric information used by the primary load balancing determination and the other time stamp associated with metric information employed by the alternate load balancing determination are expired (column 1, lines 50-52 and 58-62 and column 2, lines 44-45 of Guenthner et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. by fallback load balancing determination being employed to select the server when the time stamp associated with metric information used by the primary load balancing determination and the other time stamp associated with metric information employed by the alternate load balancing determination are expired because if neither the primary or alternate method is not successful then the system is able to use an fall back method to balance the network.

Art Unit: 2143

11. Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Shah et al.

Regarding claim 13, Brendel et al. teaches the method of Claim 7, further comprising a plurality of EDNSs and each data center including at least one of a server array controller (column 1, line 9 of Brendel et al.), host machine (column 1, lines 37-39 of Brendel et al.) and EDNS (column 2, lines 27-28 of Brendel et al.).

Brendel et al. does not teach plurality of EDNSs that are separately disposed at a plurality of geographically distributed data centers. Shah et al. teaches plurality of EDNSs that are separately disposed at a plurality of geographically distributed data centers (column 2, line 7 of Shah et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. by plurality of EDNSs that are separately disposed at a plurality of geographically distributed data centers because a DNS will be able to have quicker access to a EDNS.

12. Claim 14-15 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Shah et al. as applied to claim 13 above, and further in view of Wallis.

Regarding claim 14, Brendel et al. in view of Shah et al. teaches the method of 13 and plurality of EDNSs.

Brendel et al. in view of Shah et al. does not teach employing the copy of metric information to select a particular server at that will optimally balance the load for accessing resources. Wallis teaches wherein at least one of the plurality of EDNSs is a secondary EDNS,

Art Unit: 2143

the secondary EDNS storing a copy of the metric information collected by the primary EDNS, the secondary EDNS employing the copy of metric information to select a particular server at that will optimally balance the load for accessing resources (column 3, lines 46-48 of Wallis). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Shah et al. by employing the copy of metric information to select a particular server at that will optimally balance the load for accessing resources because this will help the system choose the most efficient server to balance the network.

Referring to claim 15, Brendel et al. in view of Shah et al. teaches the method of 13 and plurality of EDNSs.

Brendel et al. in view of Shah et al. does not teach collecting metric information that is employed to select a particular server that will optimally balance the load for accessing resources. Wallis teaches wherein at least one of the plurality of EDNSs is a secondary EDNS, the secondary EDNS collecting metric information that is employed to select a particular server that will optimally balance the load for accessing resources (column 3, lines 46-48 of Wallis). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Shah et al. by collecting metric information that is employed to select a particular server that will optimally balance the load for accessing resources because this will help the system choose the most efficient server to balance the network.

13. Claim 23-24 and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Wallis.

Regarding claim 23, Brendel et al. teaches the method of Claim 4 and server array controller, host machine, server, path and wide ip configuration (column 1, line 9 and column 1, lines 37-39 and column 2, lines 27-28 of Brendel et al.).

Brendel et al. does not teach enabling statistics to be generated for a particular aspect of the network. Wallis teaches further comprising generating statistics from metric information collected by the EDNS and enabling statistics to be generated for a particular aspect of the network (column 3, lines 46-48 of Wallis). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. by enabling statistics to be generated for a particular aspect of the network because this allows the system to best determine what servers need a particular type of static or dynamic load balancing performed.

Referring to claim 24, Brendel et al. teaches the method of Claim 23 and load balancing determination.

Brendel et al. does not teach generated statistics. Wallis teaches wherein the load balancing determination is at least partially based on the generated statistics (column 3, lines 50-54 of Wallis). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. by load balancing determination is at least partially based on the generated statistics because this allows the system to best determine what servers need a particular type of static or dynamic load balancing performed.

Regarding claim 29, Brendel et al. teaches the method of Claim 23, wherein the statistics for the local DNS include a measure of how often a particular local DNS is used and the number

Art Unit: 2143

of times that the EDNS received a resolution request from the local DNS (column 2, lines 27-28 of Brendel et al.).

14. Claim 25-26 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Wallis as applied to claim 23, 24, and 29 above, and further in view of Shah et al. and Paul et al.

Regarding claim 25, Brendel et al. in view of Wallis teaches the method of Claim 23, and the statistics for the server array controller (column 3, lines 50-54 of Wallis).

Brendel et al. in view of Wallis does not teach statistics for the server array controller. Shah et al. teaches wherein the statistics for the server array controller include number of packets between the EDNS and the server array controller and the amount of time the server array controller is active (column 2, lines 2-3 of Shah et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Wallis by having statistics for the server array controller because this allows the system to best determine what servers need a particular type of static or dynamic load balancing performed.

Brendel et al. in view of Wallis and further in view of Shah et al. does not teach delay and access rate. Paul et al. teaches the up versus down availability of the server array controller, the total number of packets in and out of the server array controller, the number of packets processed by the kernel per second, the number of servers managed by the server array controller, the number of times data is refreshed, (column 2, lines 33, 37, and 52 of Paul et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of

Art Unit: 2143

Brendel et al. in view of Wallis and further in view of Shah et al. by statistics for the server array controller including the up versus down availability of the server array controller, the total number of packets in and out of the server array controller, the number of packets processed by the kernel per second, the number of servers managed by the server array controller, the number of times data is refreshed because this allows the system to best determine what servers need a particular type of static or dynamic load balancing performed.

Regarding claim 26, Brendel et al. in view of Wallis teaches the method of Claim 23 and host machine.

Brendel et al. in view of Wallis does not teach the statistics for the host machine. Shah et al. teaches wherein the statistics for the host machine include the number of servers managed by the host machine (column 2, lines 2-3 of Shah et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Wallis by number of times a particular host machine was chosen by a wide ip for load balancing and the number of times data is refreshed because this allows the system to best determine what servers need a particular type of static or dynamic load balancing performed.

Brendel et al. in view of Wallis and further in view of Shah et al. does not teach access rate or delay. Paul et al. teaches number of times a particular host machine was chosen by a wide ip for load balancing and the number of times data is refreshed (column 2, lines 33, 37, and 52 of Paul et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Wallis and further in view of Shah et al. by number of

Art Unit: 2143

times a particular host machine was chosen by a wide ip for load balancing and the number of times data is refreshed because this allows the system to best determine what servers need a particular type of static or dynamic load balancing performed.

15. Claim 27 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Wallis and further in view of Shah et al. and Paul et al. as applied to claim 25 and 26 above and further in view of Joffe et al.

Regarding claim 27, Brendel et al in view of Wallis and further in view of Shah et al. and Paul et al. teaches the method of Claim 23, wherein the statistics for the server include the number of times a particular machine was chosen by a wide ip for load balancing, the number of times data is refreshed, and the up versus down availability of the server (column 2, lines 2-3 of Shah et al. and column 2, lines 33, 37, and 52 of Paul et al.)

Brendel et al in view of Wallis and further in view of Shah et al. and Paul et al. does not teach of connections. Joffe et al. teaches the number of connections that are handled by the server (column 3, line 67 of Joffe et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al in view of Wallis and further in view of Shah et al. and Paul et al. by having statistics for the server include the number of connections that are handled by the server because this is important in determining how to best balance the load of the network.

16. Claim 28 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Wallis as applied to claim 23, 24, and 29 above and further in view of Shah et al. and Hu.

Art Unit: 2143

Regarding claim 28, Brendel et al. in view of Wallis teaches the method of Claim 23 and DNS.

Brendel et al. in view of Wallis does not teach of statistics for the path. Shah et al. teaches wherein the statistics for the path include the average round trip time (RTT) for transactions between the server array controller and a local DNS, the number of times a specified path is chosen, the number of times that the EDNS has received data about the specified path and the number of hops between routers for a transaction between the local DNS and the selected server (column 1, lines 9-10 and column 2, line 29 of Shah et al.) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Wallis by having statistics for the path because this is important in determining how to best balance the load of the network.

Brendel et al. in view of Wallis and further in view of Shah et al. does not teach of packet completion rate. Hu teaches the packet completion rate between the server array controller and the local DNS, (column 9, lines 20-21 of Hu). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al. in view of Wallis by packet completion rate as a path statistic because this is important in determining how to best balance the load of the network.

17. Claim 34 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Wallis and further in view of Shah et al. and Hu as applied to claim 28 above and further in view Joffe et al.

Art Unit: 2143

Regarding claim 34, Brendel et al in view of Wallis and further in view of Shah et al. and Hu teaches the method of Claim 24, wherein the generated statistics include a quality of service value that is related to the sum of separate portions of collected metric information, including packet rate, round trip time, hops, virtual server capacity, and completion rate (column 1, lines 9-10 and column 2, line 29 of Shah et al. and column 9, lines 20-21 of Hu).

Brendel et al in view of Wallis and further in view of Shah et al. and Hu does not teach topology. Joffe et al. teaches the generated statistics include a quality of service value that is related to the sum of separate portions of collected metric information, including topology (column 3, lines 9-10 of Joffe et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al in view of Wallis and further in view of Shah et al. and Hu by generated statistics including a quality of service value that is related to the sum of separate portions of collected metric information, including topology because quality of service values and knowing the topology of the network help to balance the load in an efficient manner.

18. Claim 35-36 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,774,660 to Brendel et al in view of Wallis and further in view of Shah et al., Hu, and Joffe et al. as applied to claim 34 above and further in view Paul et al.

Regarding claim 35, Brendel et al in view of Wallis and further in view of Shah et al., Hu, and Joffe et al. teaches the method of Claim 34 and metric information (column 3, lines 47-48 Wallis).

Art Unit: 2143

Brendel et al in view of Wallis and further in view of Shah et al., Hu, and Joffe et al. does not teach of determining the weight of metric information. Paul et al. teaches wherein each portion of the metric information is separately multiplied by a selectable value that determines the weight of that portion of the metric information in generating the quality of service value (column 3, lines 47-48 Wallis and column 1, lines 24-25 of Paul et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al in view of Wallis and further in view of Shah et al., Hu, and Joffe et al. by determining the weight of metric information because this helps the system determine what metric information is more important in balancing the network load.

Referring to claim 36, Brendel et al in view of Wallis and further in view of Shah et al., Hu, and Joffe et al. teaches the method of Claim 34 and statistics (column 3, lines 47-48 Wallis).

Brendel et al in view of Wallis and further in view of Shah et al., Hu, and Joffe et al. does not teach of determining the weight of the metric information. Paul et al. teaches wherein the generated statistics include a dynamic ratio value for each virtual server managed by a server array controller, the dynamic ratio value being related to the quality of service value and having selectable values for determining the weight of each portion of the metric information that is employed to generate the dynamic ratio value (column 1, lines 24-25 of Paul et al.). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the WWW server for resource based load balancing of Brendel et al in view of Wallis and further in view of Shah et al., Hu, and Joffe et al. by determining the weight

Art Unit: 2143

of the metric information because this helps the system determine what metric information is more important in balancing the network load.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to April L Baugh whose telephone number is 703-305-5317. The examiner can normally be reached on Monday-Friday 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on 703-308-5221. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-9149 for regular communications and 703-746-9149 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

ALB
December 18, 2002


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